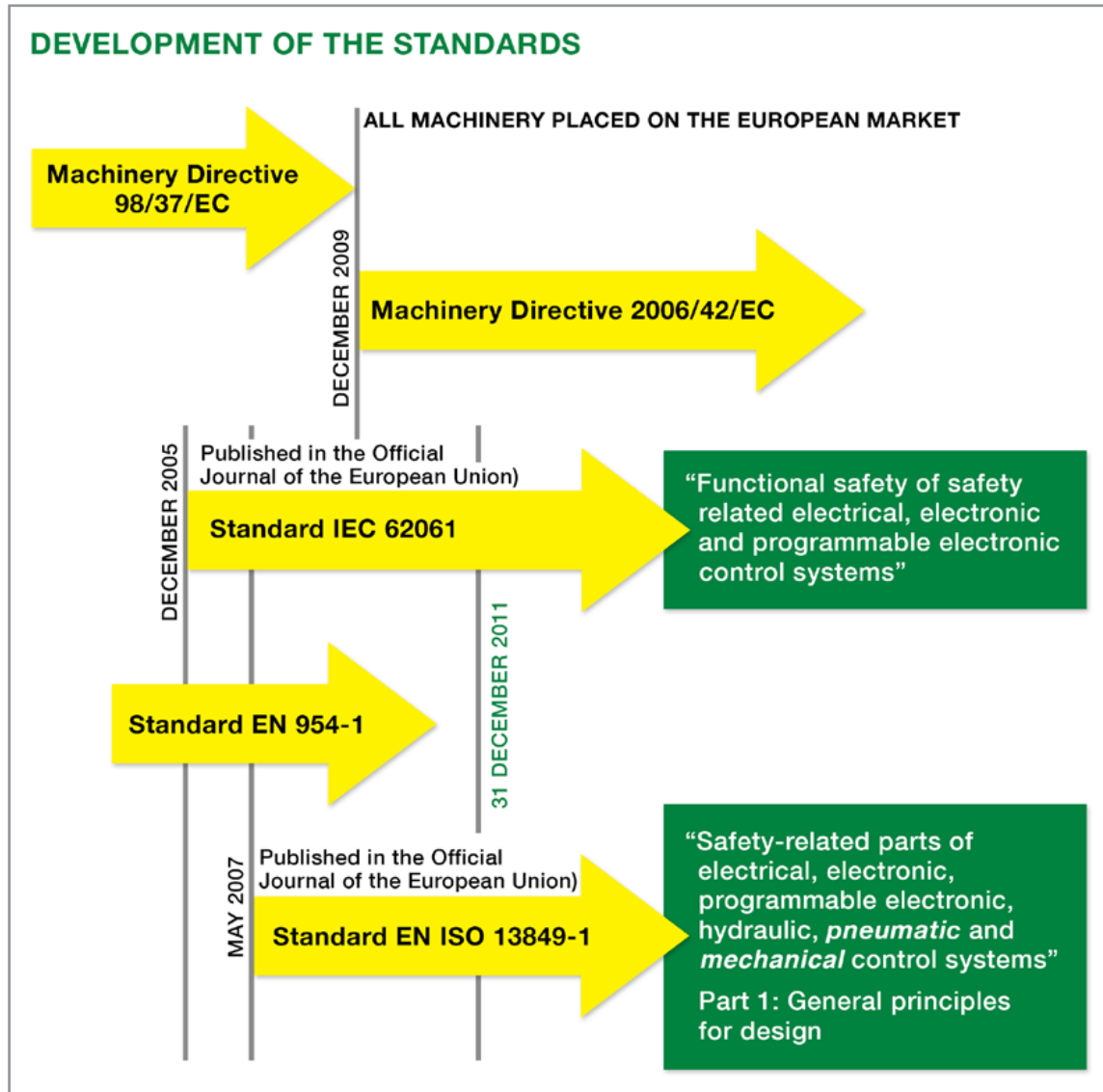


AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Principle of the Safety of Machinery:

To guarantee the safety and health of persons exposed to the installation, operation, adjustment and maintenance of machinery.



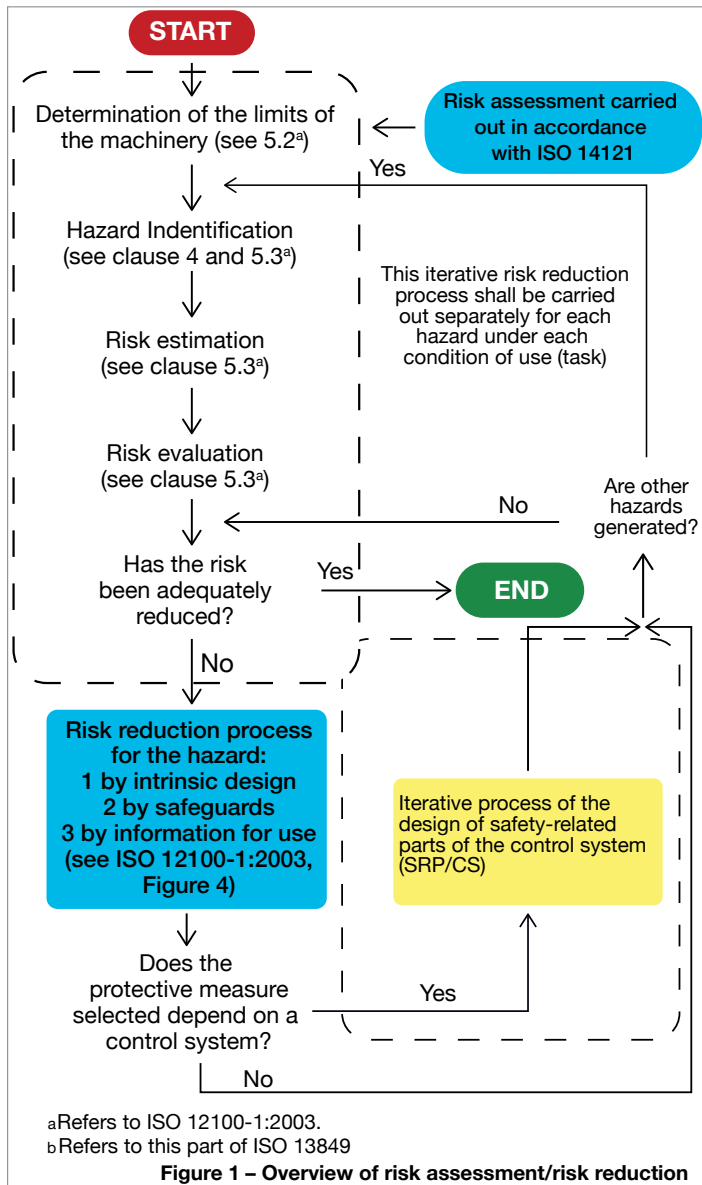
Three key concepts for the design of machinery and their safety functions have emerged from the implementation of the new Machinery Directive 2006/42/EC:

- A risk analysis prior to design
- A particular consideration of the quantitative aspect of the safety functions in addition to the qualitative approach
- The use of performance levels (PL)

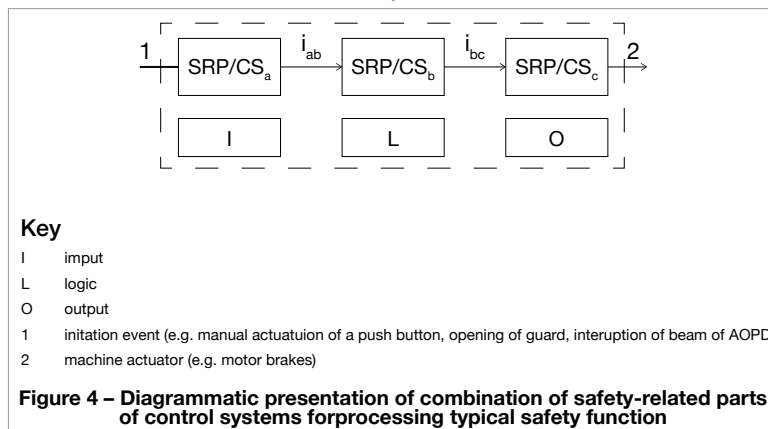
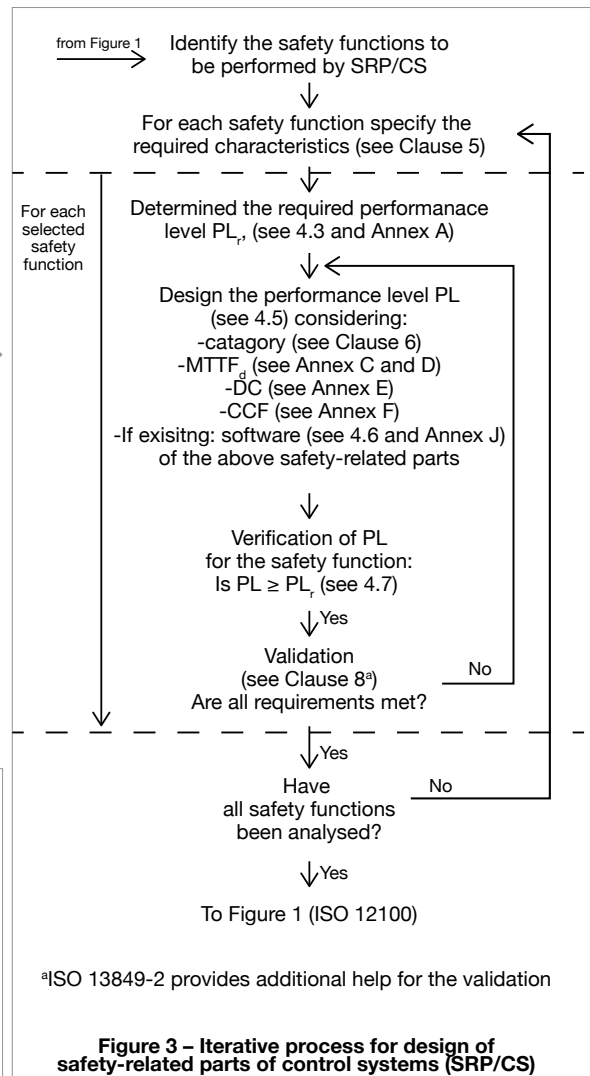
Risk Evaluation:

The manufacturer or supplier of a machine must see to it that a risk evaluation is conducted to determine the health and safety requirements for persons involved in its operation. The machine must then be designed and constructed in accordance with the results of the risk evaluation.

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

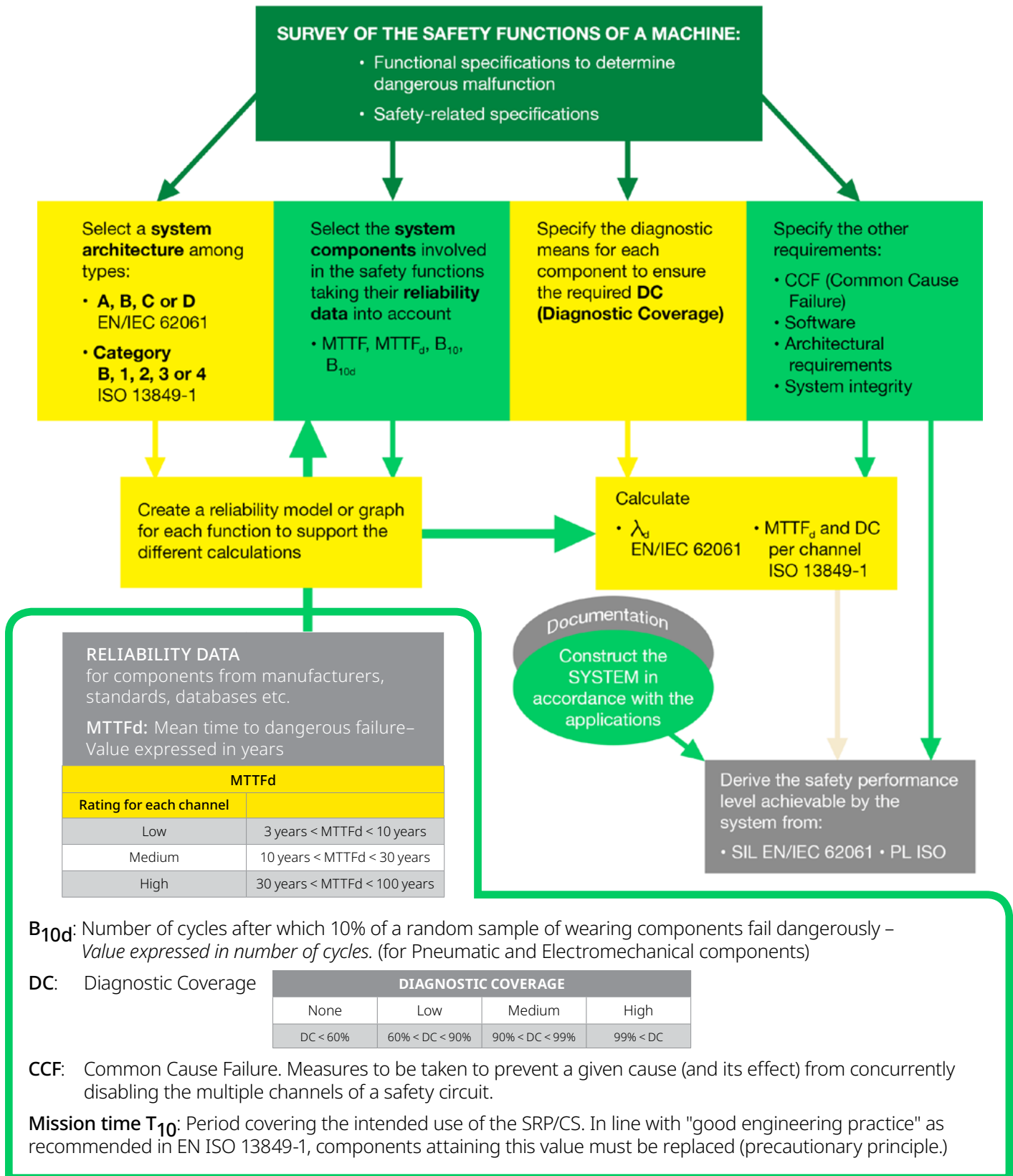


Risk Assessment/Risk reduction:
 Identify machine hazards, assess the risks of the hazards and determine the appropriate actions to mitigate the hazards.



AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

EN ISO 13849-1 - EN/IEC 62061



AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

The circuit analysis example identified on this and the preceding pages is specific to the Zoned Safety Manifold and represents the evaluation of only the Pneumatic Subsystem, which is part of the complete SRP/CS. It is meant to show the capabilities that can be achieved with the Aventics Zoned Safety Manifolds, when common pneumatic safety circuitry is utilized.

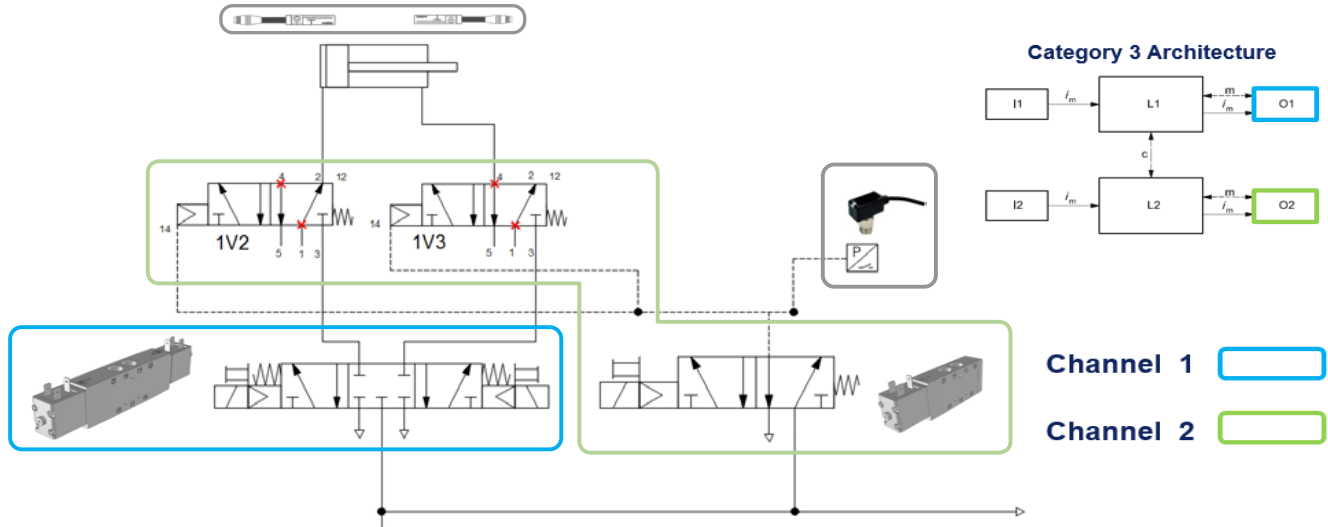


Fig. 1 Typical pneumatic circuit implementation, Stopping of Motion

The individual components used to render the pneumatic safety circuit in Fig. 1, can be rendered in the Zoned Safety Manifold in the same manner. In this example, the representative Safety Function is: Stopping of Motion.

Safety Function: Safety Related Stop and Unexpected Startup

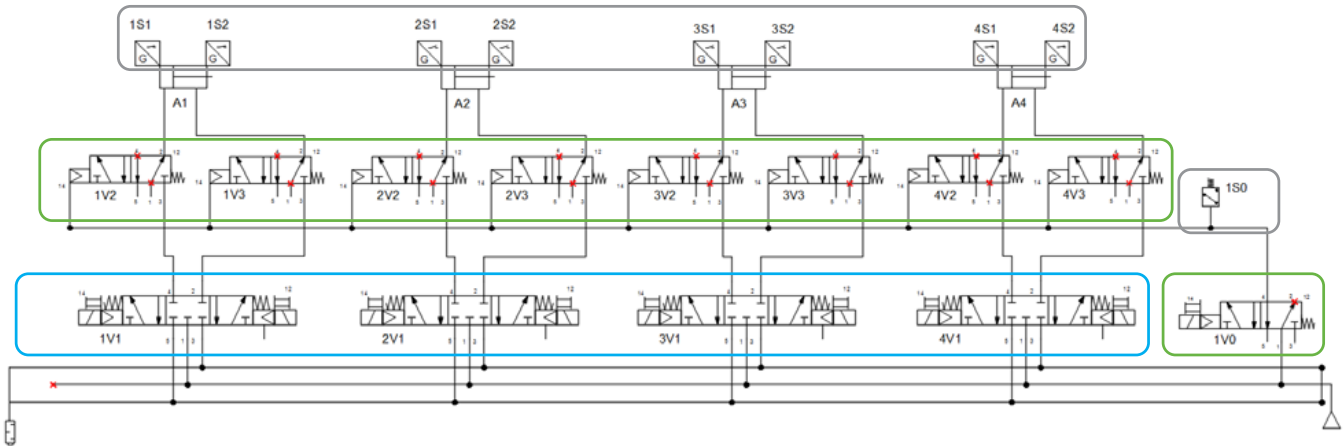


Fig. 2 Multiple Safety Circuit Rendering

Because the Safety Function of each Actuator is the same and will be rendered simultaneously, the evaluation can be approached as a single circuit rendering as in Figure 1. Fig. 3 represents this in diagrammatic form.

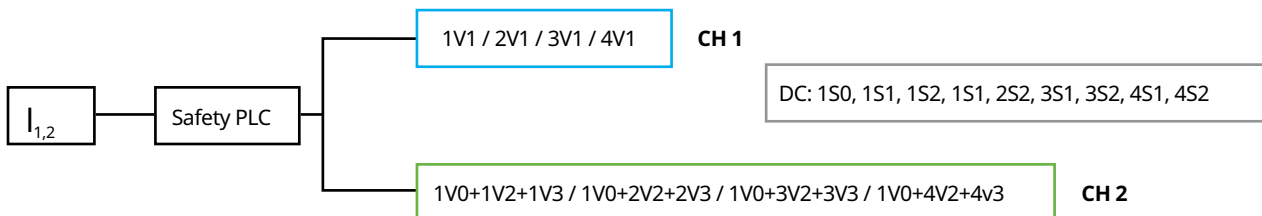


Fig. 3 Diagrammatic Representation – Zoned Safety Manifold – SRP/CS (pneumatic components as a sub-system)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

The following example calculations validate the Performance Level (PL) for the SRP/CS, as a single circuit rendering, as identified above. The following validation summarizes the calculations. Complete calculations for this Safety Function rendering and others can be found in the 503 Zoned Safety Technical Manual on the Emerson.com website.

The Performance Level (PL) is derived from the Category adherence, Mean Time to Failure Dangerous (MTTFd), Common Cause Failure (CCF) and Diagnostic Coverage (DC). Below are the representative equations used, as well as the machine parameters for this example. Mission Time (T_M), determines the life of the SRP.

Equations:

$$MTTF_d = \frac{B_{10d}}{0,1 \times n_{op}} \quad n_{op} = \frac{d_{op} \times h_{op} \times 3600 \text{ s/h}}{t_{cycle}}$$

$$DC_{avg} = \frac{\frac{DC_1}{MTTF_{d1}} + \frac{DC_2}{MTTF_{d2}} + \dots + \frac{DC_N}{MTTF_{dN}}}{\frac{1}{MTTF_{d1}} + \frac{1}{MTTF_{d2}} + \dots + \frac{1}{MTTF_{dN}}} \quad T_M = \frac{B_{10d}}{n_{op}}$$

Machine Parameters:

Working Hours h_{op} = 16 hours

Working days d_{op} = 240 days

Cycle Time t_{cycle} = 10 seconds

The summarized values for MTTFd, DC, CCF and T_M on the following pages are a result of applying the machine parameters, B_{10d} component values, etc. to the identified equations.

MTTFd Calculation Results:

B_{10d} of 1V1 thru 4V1 = 20,000,000 cycles (R503A2B60MA00F1)



CHANNEL 1

B_{10d} of 1V0 = 20,000,000 cycles (R503A2B10M11MF1)



CHANNEL 2

B_{10d} of 1V2 thru 4V3 = 60,000,000 cycles (L12PA452O000000)



MTTFd for **Channel 1** yields: **HIGH**

DC, Indirect Monitoring, Position Sensing, 60%

MTTFd for **Channel 2** yields: **HIGH**

DC, Indirect Monitoring, position & Pressure Sensing, 60% & 90% respectively

DC Average realized, 70%

Diagnostic Coverage Average (DC_{avg}) Calculation Results:

DC_{avg} = 71% = LOW

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Common Cause Failure Estimation: Calculation Results:

CCF = 75 = Satisfied

Mission Time Calculation Results:

T_M (R503A2B60MA00F1) = 20,000,000 cycles / 1,382,400 cycles/year = 14.5 years (replace component after 14.5 years)

T_M (R503A2B10M11MF1) = 20,000,000 cycles / 1,382,400 cycles/year = 14.5 years (replace component after 14.5 years)

T_M (L12PA452O000000) = 60,000,000 cycles / 1,382,400 cycles/year = 43 years (replace component after 43 years)

Based on the previous calculation of MTTFd, CCF and DC, as well as the adherence to a Category 3 architecture for this example, the components utilized will satisfy a Category 3 PLd requirement.

Table 7 – Simplified procedure for evaluating PL achieved by SRP/CS

Category	B	1	2	2	→ 3	3	4	Performance
DC _{avg}	none	none	low	medium	low	medium	high	
MTTF _{avg} of each channel								
Low	a	Not Covered	a	b	b	c	Not Covered	
Medium	b	Not Covered	b	c	c	d	Not Covered	
High	Not Covered	c	c	d	d	d	e	

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

503 Series – Directional Control Valve Platform

Featuring Higher Flow in a Compact Valve Package

Features

- 5 Ported, 2 and 3 position, 4-way, Spool & Sleeve and Rubber Seal, Cv: 1.2 - 1.4
- Solenoid air pilot actuated
- Low wattage 1.7 Watt for DC application
- DC solenoids Polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- IN Fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- G3 Fieldbus Electronics
- IP65 Certified

Sandwich and Manifold Accessories

- Pressure Regulators for supply pressure control at individual valve
- Speed control to control exhaust flow allows for control of actuator extend or retract speed
- Shut off block for individual valve to be isolated from pressure supply during operation and repair
- Mid Station Supply Manifold block allows for multiple pressure zones (with blocking discs) or additional air supply to a manifold



ISO 15407-2 (26mm)
ISO 15407-1 (26mm)

Fieldbus Electronics Compatible

- G3 Fieldbus Electronics
 - Graphic Display for easy commissioning, visual status & diagnostics
 - One Node supports up to 16 I/O modules
 - Available with Auto Recovery Module (ARM) which allows configuration information to be saved and reloaded to replacement module automatically

Construction


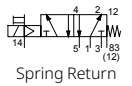
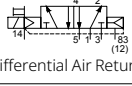
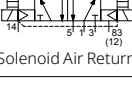
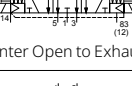
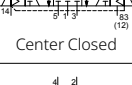
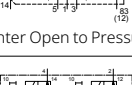

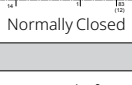
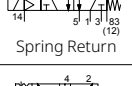
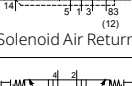
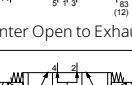
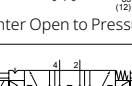
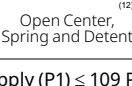
Materials in Contact w/Fluid	
Body	Aluminum, E-Coating treatment
Spool	Aluminum or Stainless Steel
Piston	POM
Spring	Steel
Spool Seals	NBR + PUR
Other Seals	NBR + FKM
Other materials	PAM (Polyarylamide) 50% Glass Fiber Reinforced
Valve to Subbase Gasket	NBR
Subbases	Aluminum, E-Coating treatment

Operating Data

All Solenoids Are Continuous Duty Rated	24 VDC
Power (Watts)	1.7
Holding Current (Amps)	0.071
Ambient Temperature Range Min/Max °F (°C)	-14° F (-10° C)/122° F (50° C)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

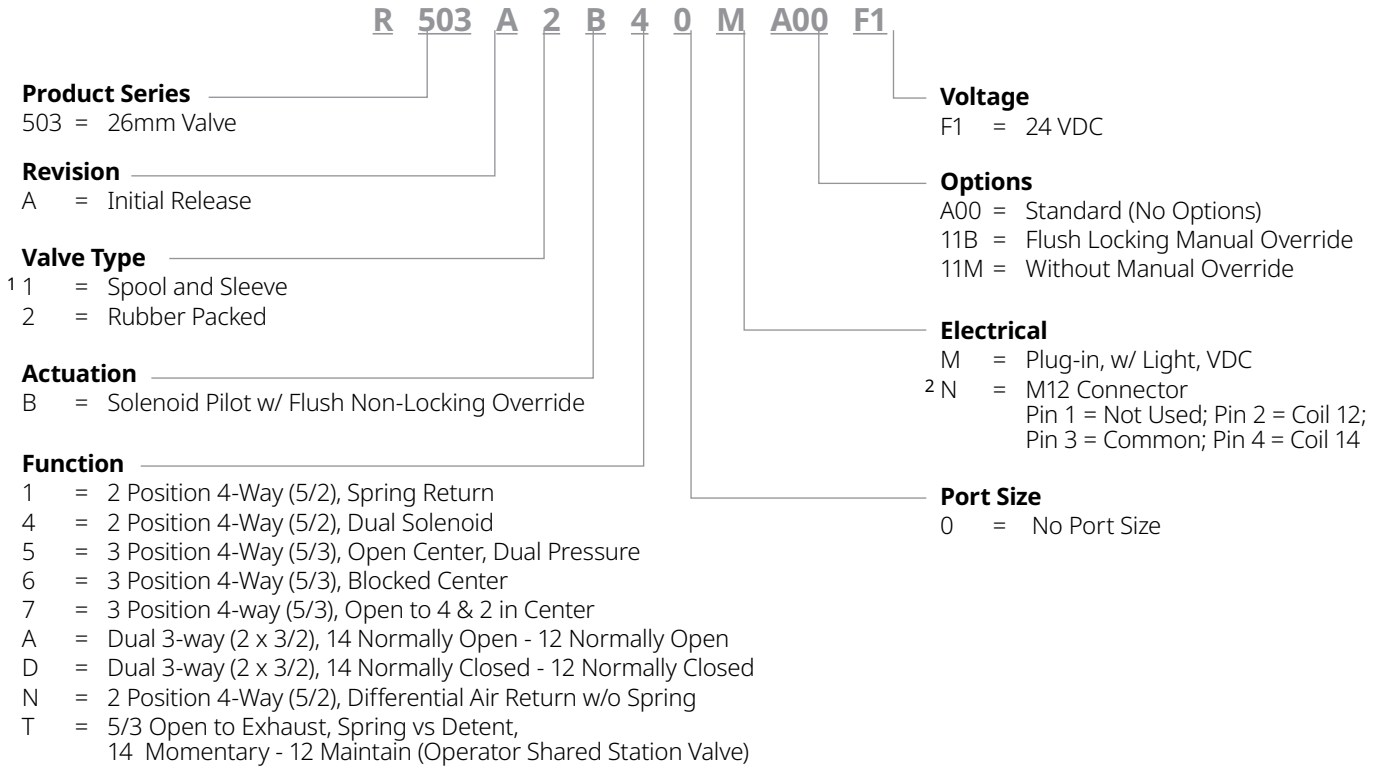
Performance Data

Function Type	Function Code	ISO Symbol Pilot (14) Return (12)	Interface	Rated Flow		Response Time (ms)	Pilot Pressure at 73°F/23°C PSI (bar)		Operating Pressure Port 1 PSI (bar)/inHg (-bar)		 Part Number
				at 90 PSI Cv (l/min (ANR))			min.	max	min.	max	
				1→2 1→4	2 3 4→5	Energize/ De-Energize					
Rubber Packed Technology, with Manual Override											
5/2	B1	 Spring Return	Proprietary	1.422 (1400)	1.321 (1300)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A2B10MA00F1
			ISO	1.150 (1150)	1.118 (1100)						
	BN	 Differential Air Return	Proprietary	1.422 (1400)	1.321 (1300)	28/40	44 (3)	115 (8)	28 (-0.95)	115 (8)	R503A2BN0MA00F1
			ISO	1.150 (1150)	1.118 (1100)						
	B4	 Solenoid Air Return	Proprietary	1.422 (1400)	1.321 (1300)	20/20	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A2B40MA00F1
			ISO	1.150 (1150)	1.118 (1100)						
5/3	B5	 Center Open to Exhaust	Proprietary	0.550 (550)	1.220 (1200)	18/45	44 (3)	115 (8)	28 (-0.95)	115 (8)	R503A2B50MA00F1
			ISO	0.550 (550)	1.000 (1000)						
	B6	 Center Closed	Proprietary	1.422 (1400)	1.321 (1300)	15/20	58 (4)	115 (8)	28 (-0.95)	115 (8)	R503A2B60MA00F1
			ISO	1.220 (1200)	1.118 (1100)						
	B7	 Center Open to Pressure	Proprietary	1.220 (1200)	0.550 (550)	18/45	44 (3)	115 (8)	28 (-0.95)	115 (8)	R503A2B70MA00F1
			ISO	1.118 (1100)	0.550 (550)						
$\begin{matrix} \text{NO} \\ \text{X} \\ \text{NC} \end{matrix}$	BA	 Normally Open	Proprietary	0.950 (950)	0.950 (950)	15/20	51 (3.5)	115 (8)	51* (3.5)	115 (8)	R503A2BA0MA00F1
			ISO	0.850 (850)	0.850 (850)						
$\begin{matrix} \text{NC} \\ \text{X} \\ \text{NO} \end{matrix}$	BD	 Normally Closed	Proprietary	0.950 (950)	0.800 (800)	15/20	51 (3.5)	115 (8)	51* (3.5)	115 (8)	R503A2BD0MA00F1
			ISO	0.850 (850)	0.750 (750)						
Spool and Sleeve Technology, with Manual Override											
5/2	B1	 Spring Return	Proprietary	1.118 (1100)	1.220 (1200)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B10MA00F1
			ISO	1.016 (1000)	0.965 (950)						
	B4	 Solenoid Air Return	Proprietary	1.118 (1100)	1.220 (1200)	15/15	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B40MA00F1
			ISO	1.016 (1000)	0.965 (950)						
5/3	B5	 Center Open to Exhaust	Proprietary	1.016 (1000)	1.016 (1000)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B50MA00F1
			ISO	0.750 (750)	0.700 (700)						
	B7	 Center Open to Pressure	Proprietary	0.915 (900)	0.965 (950)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B70MA00F1
			ISO	0.700 (700)	0.750 (750)						
	BT	 Open Center, Spring and Detent	Proprietary	1.016 (1000)	1.016 (1000)	Spring: 20/60 Detent: 15/NA	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1BT0MA00F1
			ISO	0.750 (750)	0.700 (700)						

* 51 PSI for a pressure supply (P1) ≤ 109 PSI (if > 109 PSI, Pmin. = P1-58 PSI)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

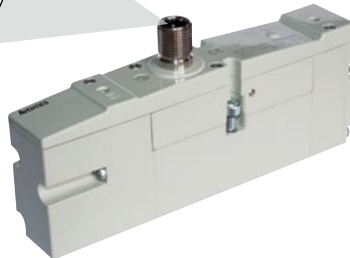
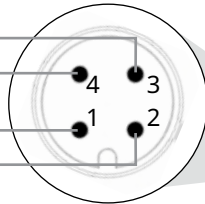
How to Order: Valve



¹ Available with Functions 1, 4, 5 & 7

² See diagram:

- Pin 3 = Common
- Pin 4 = Coil 14
- Pin 1 = Not Used
- Pin 2 = Coil 12



AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

How to Order: Regulator

R 503 A R S 1 1 J A00 1 0

Product Series
503 = 26mm Valve

Revision
A = Initial Release

Product Type
R = Regulator

Regulator Type
S = Single Reg. - Pressure to Port 1
D = Double Reg. - Pressure to Ports 5 & 3
* E = Double Reg. - Pressure to Ports 4 & 2, w/o Valve
T = Double Reg. - Pressure to Ports 1 & 3, 2 Pressure Selector

Pressure Range
1 = 10 - 130 PSIG (0.7 - 9 bar)
3 = 3 - 30 PSIG (0.2 - 2 bar)
4 = 5 - 60 PSIG (0.3 - 4.1 bar)

Interface
* 0 = No Valve Interface
1 = Proprietary
2 = ISO 15407-2
3 = ISO 15407-1

Options
A00 = Standard (No Options)
16N = Jumper for Supply Pressure to Valve, 14 End
16P = Jumper for Supply Pressure to Valve, 12 End
** 14M = Tamperproof Needle Cartridge Assembly or Regulator

Wiring Option
J = Plug-in, Receptacle Assembly
* 0 = Non Plug-in

Gauge Type
1 = PSI
2 = bar
8 = with 1/8" NPTF adaptor for external gauge
G = with 1/8" G tap adaptor for external gauge

* For Regulator Type E must select 0 Wiring Option and 0 Interface
** Key lock device not included - M699AY438663001 sold separately

Sandwich Pressure Regulator Block

Types: RS / RD / RE / RT

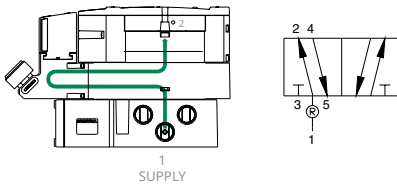


ISO 15407-2/15407-1 Interface



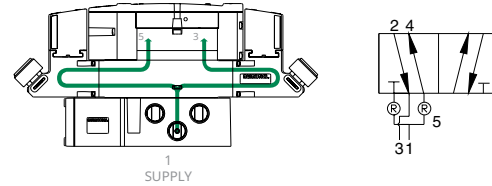
Proprietary Interface

Type RS



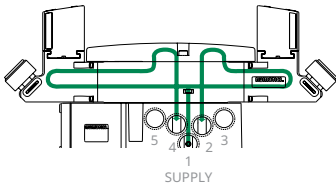
Single pressure from a single supply.

Type RD



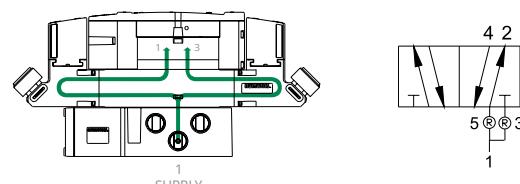
Dual pressure from a single supply.

Type RE



External outlet regulator used with jumper plate for single or dual pressure.

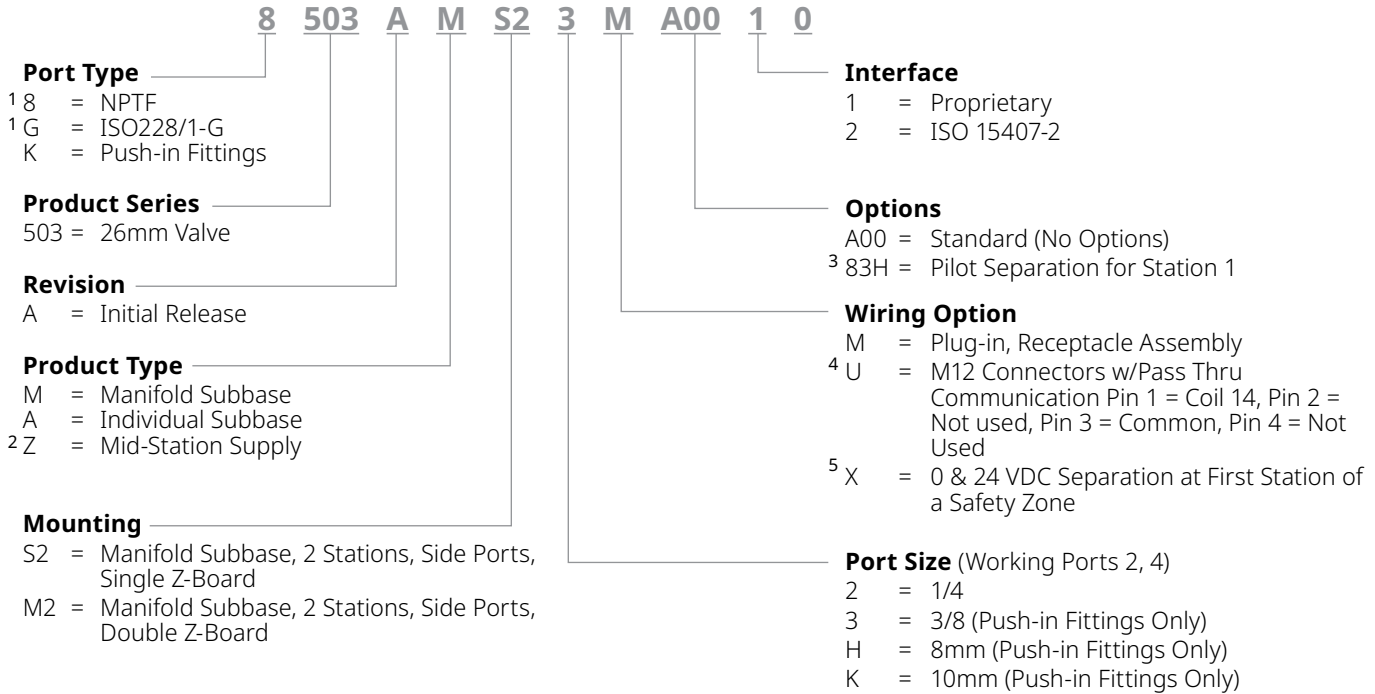
Type RT



Two-pressure selector used for multi-pressure applications.

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

How to Order: Mounting



¹ Port Type 8 & G available in Port Size 1/4 only

² Available with M2 Mountings only

³ Only available with 'X' Wiring

⁴ Only available with Product Type 'M' and 'S2 Mounting'

⁵ Only available with Product Type 'M' and 'M2' Mounting

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

How to Order: Manifold Assembly

8 503 A V 3 B 3 0 0 V A00

Port Type
¹ 8 = NPTF
 G = ISO228/1-G
 K = Push-in Fittings

Product Series
 503 = 26mm Valve

Revision
 A = Initial Release

Product Type
 V = Valve Manifold Assembly

Electrical Interface
 3 = G3 Series Fieldbus Interface

Options
 A00 = Standard (No Options)
 MUF = Muffler in End Plates
 DRM = DIN Rail Mount
 DWM = DIN Rail with MUF
 14X = External Pilot Supply from Port #14
 D12 = (14X) External Pilot Supply from Port #14 and (MUF) Muffler in End Plates
 D14 = (14X) External Pilot Supply from Port #14 and (DRM) DIN Rail Mount
 F06 = (14X) External Pilot Supply from Port #14, (MUF) Muffler in End Plates and (DRM) DIN Rail Mount
 A45 = Zoned Pilot for End Plate Assembly Kit
 D47 = A45 + MUF
 D48 = A45 + DRM
 D49 = 14X
 F21 = A45 + DRM + MUF
 F22 = A45 + 14X + MUF
 F23 = A45 + 14X + DRM
 K30 = A45 + 114X + DRM + MUF

End Plate Style
 V = Vertical

Second Valve Series
 0 = No Second Valve Series

End Plate Port Size (Supply Ports 1, 3/5)
 3 = 3/8
 4 = 1/2
 K = 10mm
 M = 12mm

Number of Valve Stations

B = 2	J = 10	R = 18	Z = 26
D = 4	L = 12	T = 20	3 = 28
F = 6	N = 14	V = 22	5 = 30
H = 8	P = 16	X = 24	7 = 32

¹ Port Type 8 & G available in Port Size 3/8 only

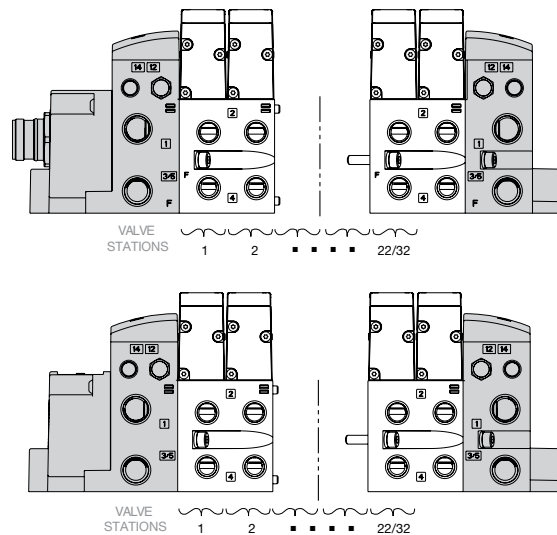
NOTE: See the Multipin Electrical Interface table for Max Solenoid Outputs.

Sub-D, Terminal Strip, Round Interface, and End Effector Interface

- Shaded components described by Assembly Kit model number designation
- Each valve manifold station is listed in sequential order from left to right when facing the port side of the manifold as indicated

Example Order - 503 Shown





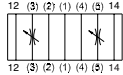
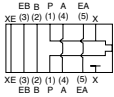
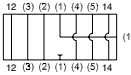
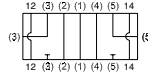
25 Pin Sub-D	8503AVJF300VA00
Valve Station #1	R503A2B40MA00F1
Valve Station #2	R503A2B40MA00F1
Mounting #1	8503AMM22MA0010
Valve Station #5	R503A2B60MA00F1
Valve Station #6	R503A2B60MA00F1
Mounting #2	8503AMM22MA0010
Valve Station #5	R503A2B40MA00F1
Valve Station #6	R503A2B40MA00F1
Mounting #3	8503AMM22MA0010
	Assembled




NOTE: Example order for Fieldbus electronics see 580 or G3 Fieldbus catalog.

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Sandwich Option Kit

Valve Series	Type	Speed Control Kit	Shut Off Block Kit	Pressure Block Kit		Exhaust Block Kit	
							
		Inserted between the valve and the mounting. It allows the user to adjust the flow out of the 3 & 5 ports of the valve. This will allow them to adjust the speed of the extend and retract of the cylinder.	Used to shut-off pressure when mounted below valve. It allows for easy maintenance without the need to shut-off pressure to the entire manifold.	Used to supply a separate pressure to a single valve station without needing blocking discs.		Used to isolate the exhaust of a single valve station from the manifold. It allows for faster exhaust response by re-routing exhaust externally from the manifold.	
							
				1/4 NPTF	1/4 G	1/4 NPTF	1/4 G
503 Series (26mm)	Proprietary	R503AS425575002	R503AY426707002	8503AW428300004	G503AW428300004	8503AX428300002	G503AX428300002
	ISO 15407-2	R503AS425575001	R503AY426707001	8503AW428300003	G503AW428300003	8503AX428300001	G503AX428300001
	ISO 15407-1	R503AS432940001	-	-	-	-	-

Mid-Station Supply Manifold Block Kit

Valve Series	Product Image (Example Only)	Description	Interface	Thread Type	Supply Port 1 Size	Part Number
503 Series (26mm)		Add additional supply and exhaust capacity to large manifold assemblies.	ISO 15407-2	NPTF	1/4	8503AZM42TA0020
				G Tap	1/4	G503AZM42TA0020
			Proprietary	NPTF	1/4	8503AZM42TA0010
				G Tap	1/4	G503AZM42TA0010
			ISO 15407-2	Push-in Fittings	1/4	K503AZM42TA0020
					3/8	K503AZM43TA0020
					8mm	K503AZM4HTA0020
					10mm	K503AZM4KTA0020
			Proprietary	Push-in Fittings	1/4	K503AZM42TA0010
					3/8	K503AZM43TA0010
8mm	K503AZM4HTA0010					
10mm	K503AZM4KTA0010					

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Internal/External Pilot Selection

Manifold Assembly

Internal Pilot Supply Plug Location



External Pilot Supply Plug Location

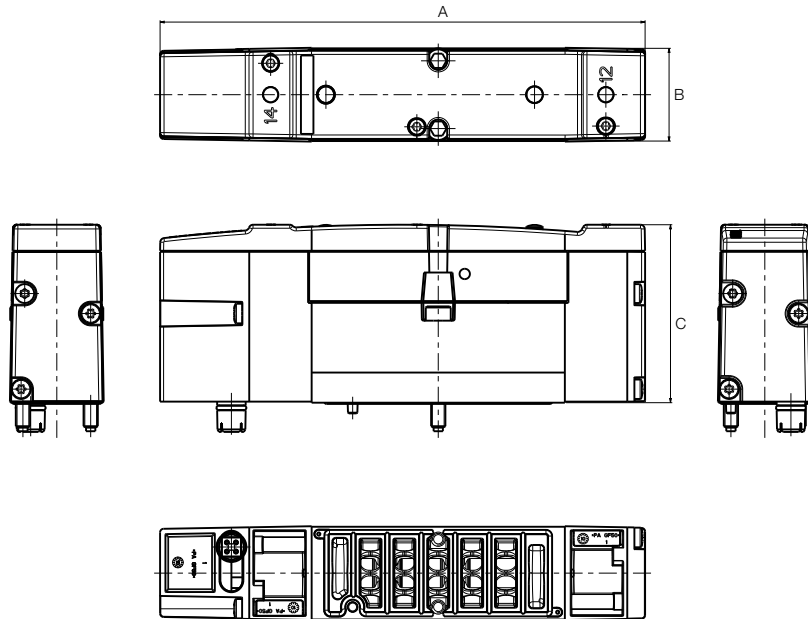


NOTE: Manifold Assemblies are factory set for internal pilot supply. To convert to external pilot supply install pilot supply seal screws 503 Series: 426188-001, as shown in the pictures.

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

503 Series Plug-in Valve



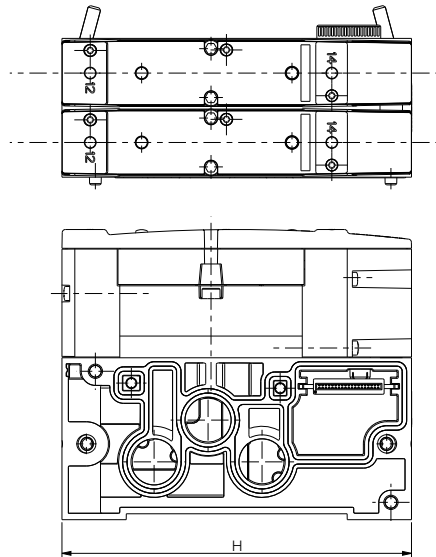
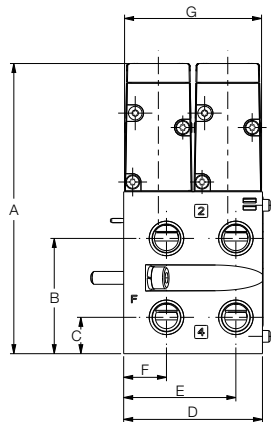
Weight	Valve Body	Manifold Block	End Plates
lbs (kg)	0.520 (0.236)	3.00 (1.36)	1.15 (0.52)

A	B	C
136 (5.35)	26 (1.02)	50 (1.97)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Plug-in Valve Mounted Plug-in Manifold Block



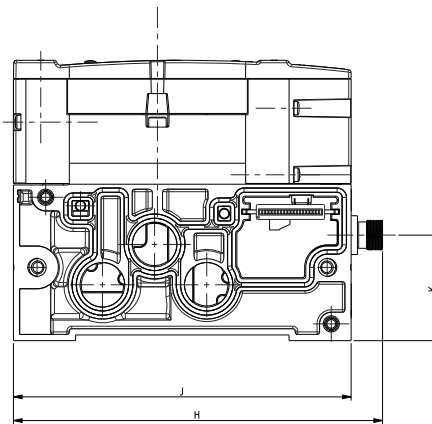
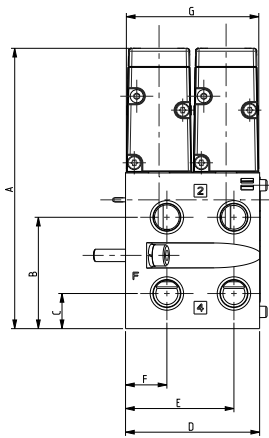
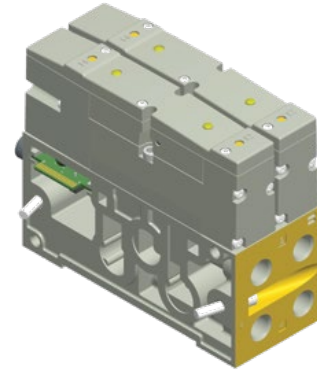
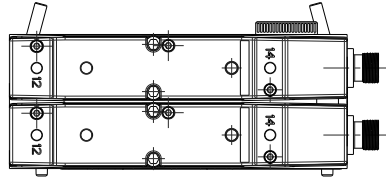
A	B	C	D	E	F	G	H
112.9 (4.445)	44.9 (1.768)	14.2 (0.56)	54 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.098)	136 (5.35)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

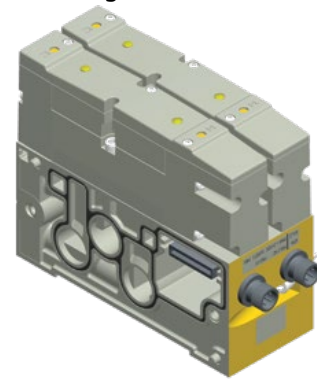
Dimensions: mm (inches)

Plug-in Manifold Block

U-Wiring Option



U-Wiring Manifold Block



A	B	C	D	E	F	G	H	J	K
112.9 (4.44)	44.9 (1.77)	14.2 (0.56)	54.0 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.10)	148.7 (5.85)	136.0 (5.35)	42.5 (1.67)

Zoned Safety - Pilot Valve Manifold Base ("U" Wiring)

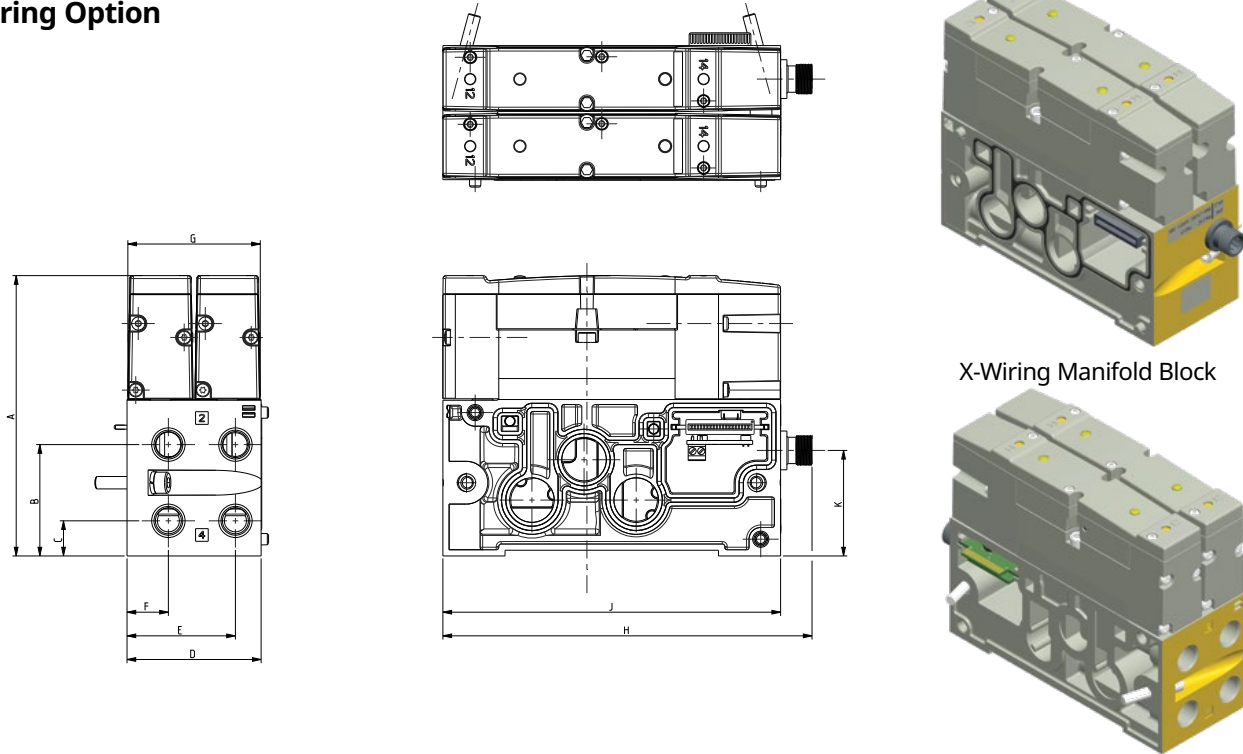
- The mounted pilot valves are electrically controlled via the M12 connector; power and communication are isolated from the G3 node
- Mounted pilot valves supply Pilot Operated Check Valves, Rod-Locks, Pilot Operated Spring Return Valves, etc.
- When the M12 connector is externally supplied by a Safety Relay or Safety Output via a Safety PLC, the pilot valves become one of the redundant channels required for Category 3 & 4 circuits

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Plug-in Manifold Block

X-Wiring Option



A	B	C	D	E	F	G	H	J	K
112.9 (4.44)	44.9 (1.77)	14.2 (0.56)	54.0 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.10)	148.7 (5.85)	136.0 (5.35)	42.5 (1.67)

Zoned Safety - Zoned Power Manifold Base ("X" Wiring)

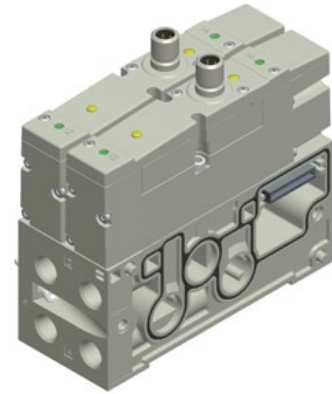
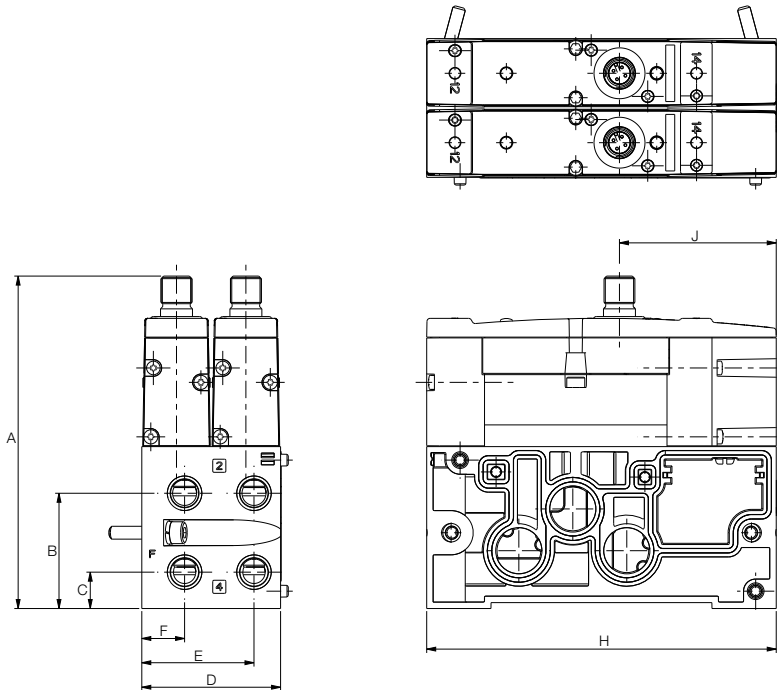
- The M12 Connector supplies power to up to 16 valve solenoid coils
- The G3 node provides communication to these valve solenoid coils
- When the M12 connector is externally supplied by a Safety Relay or Safety Output via a Safety PLC, the valves within the Safety Zone become one of the redundant channels of a Category 3 or 4 circuit

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

M12 Valve Mounted (ISO 15407-1)

2-Station Plug-in Manifold Block

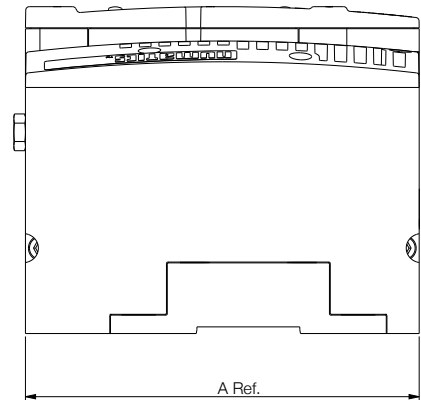
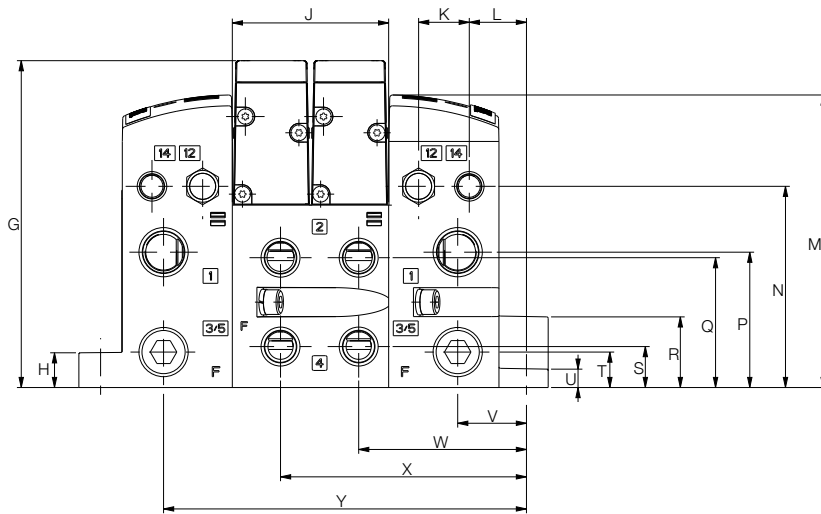
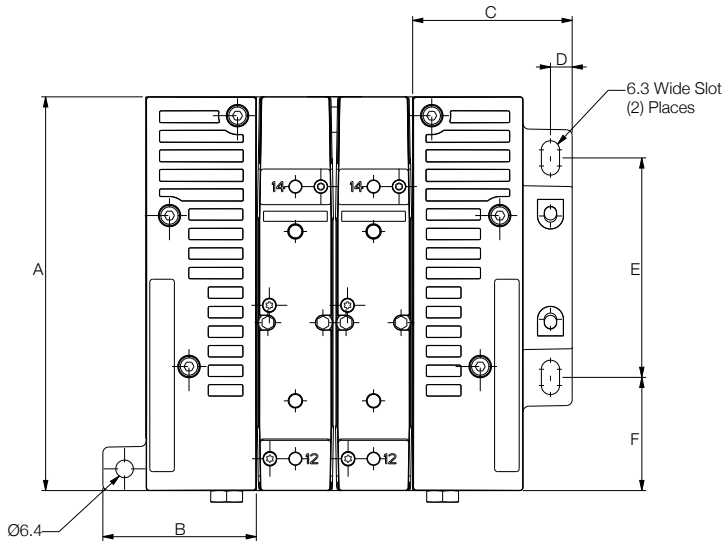


A	B	C	D	E	F	G	H	J
129.4 (5.094)	44.9 (1.768)	14.2 (0.56)	54 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.098)	136 (5.35)	61 (2.4)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Manifold Assembly with Vertical End Plates

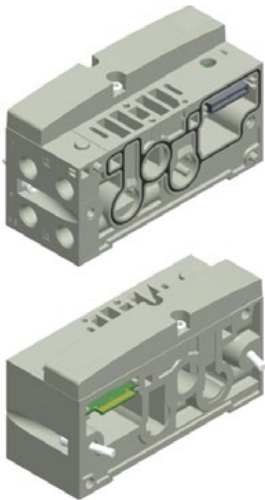
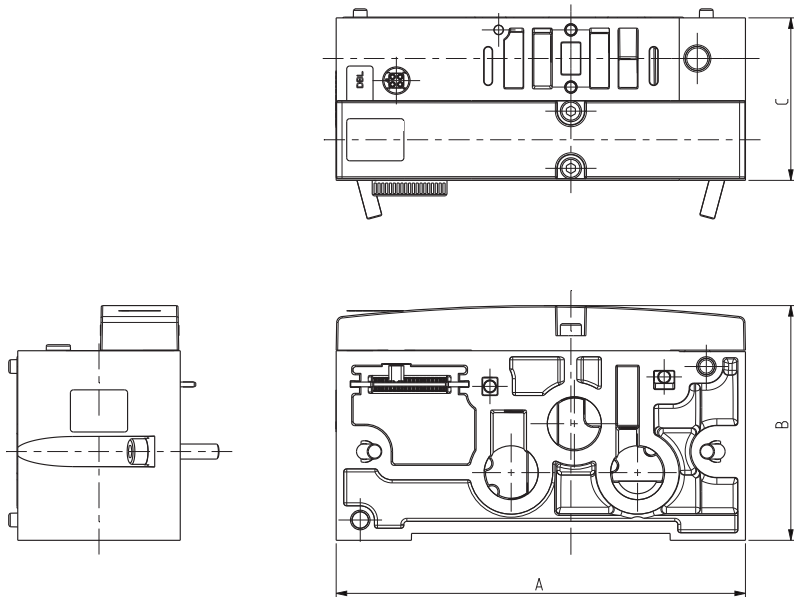


A	B	C	D	E	F	G	H	J	K	L	M
136 (5.354)	53 (2.087)	55.1 (2.17)	7.5 (0.3)	75.8 (2.98)	39.1 (1.54)	112.9 (4.445)	12 (0.47)	54 (2.13)	17.5 (0.69)	19.8 (0.78)	101.1 (3.98)
N	P	Q	R	S	T	U	V	W	X	Y	
69.5 (2.74)	46.8 (1.843)	44.9 (1.77)	24.4 (0.96)	14.2 (0.56)	12.3 (0.48)	6.4 (0.25)	23.8 (0.94)	58 (2.28)	85 (3.346)	125.4 (4.937)	

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

503 Series Mid-Station Supply Block



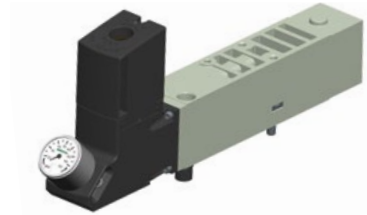
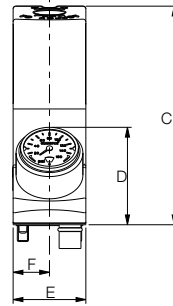
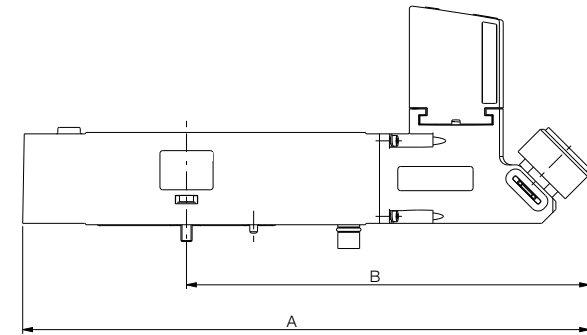
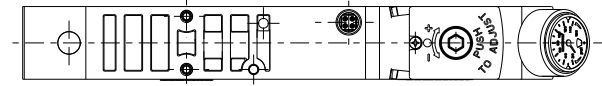
A	B	C
136 (5.35)	78 (3.07)	54 (2.13)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Sandwich Pressure Regulator

Single Regulator

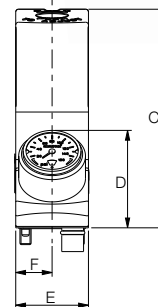
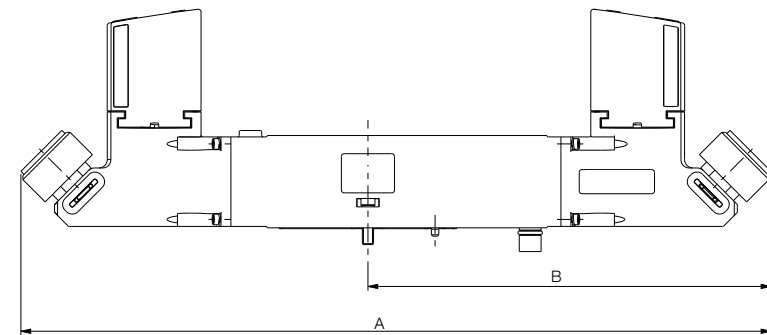
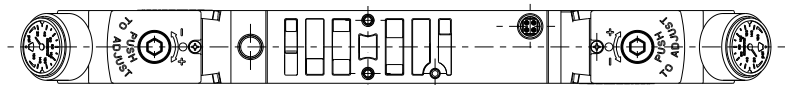


Weight
lbs (kg)
0.95 (0.43)

A	B	C	D	E	F
202.7 (7.98)	144.1 (5.673)	78.2 (3.08)	34.8 (1.37)	26 (1.02)	13 (0.51)

Dimensions: mm (inches)

Double Regulator



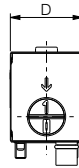
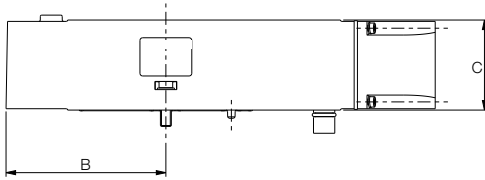
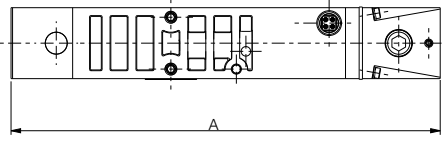
Weight
lbs (kg)
1.45 (0.66)

A	B	C	D	E	F
268.2 (10.56)	144.1 (5.673)	78.2 (3.08)	34.8 (1.37)	26 (1.02)	13 (0.51)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Sandwich Shut Off Block Kit

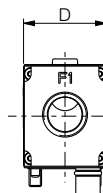
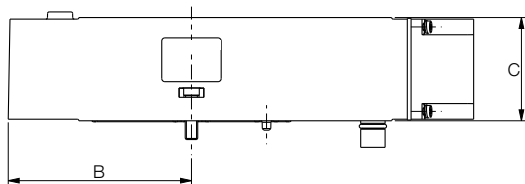
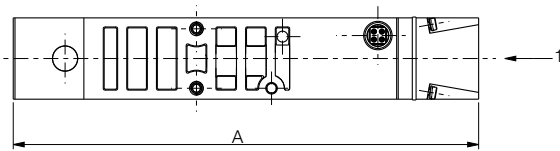


Weight
lbs (kg)
0.45 (0.20)

A	B	C	D
157.3 (6.193)	58.6 (2.307)	33 (1.3)	26.5 (1.04)

Dimensions: mm (inches)

Sandwich Pressure Block Kit



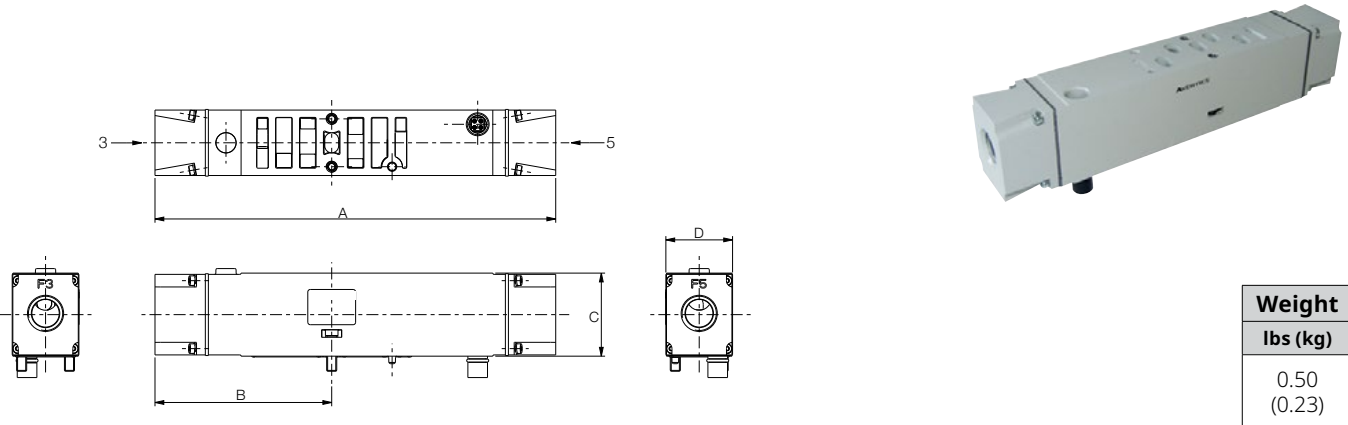
Weight
lbs (kg)
0.45 (0.20)

A	B	C	D
148.8 (5.858)	58.6 (2.307)	33 (1.3)	26.5 (1.04)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Sandwich Exhaust Block Kit

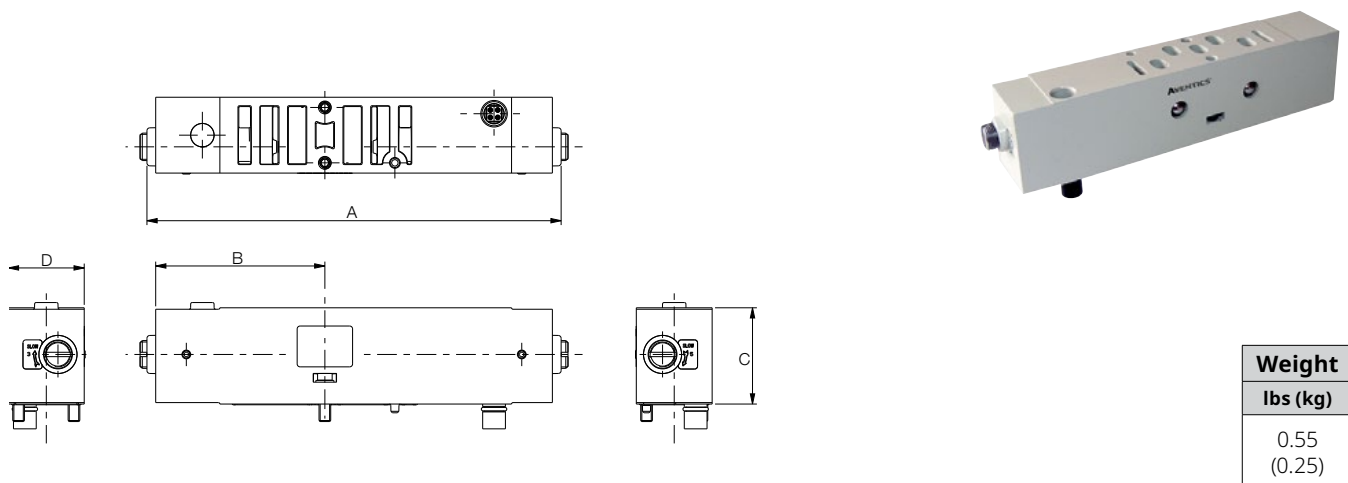


Weight	
lbs	kg
0.50	(0.23)

A	B	C	D
159.2 (6.268)	70.2 (2.764)	33 (1.3)	26.5 (1.04)

Dimensions: mm (inches)

Sandwich Speed Control Kit



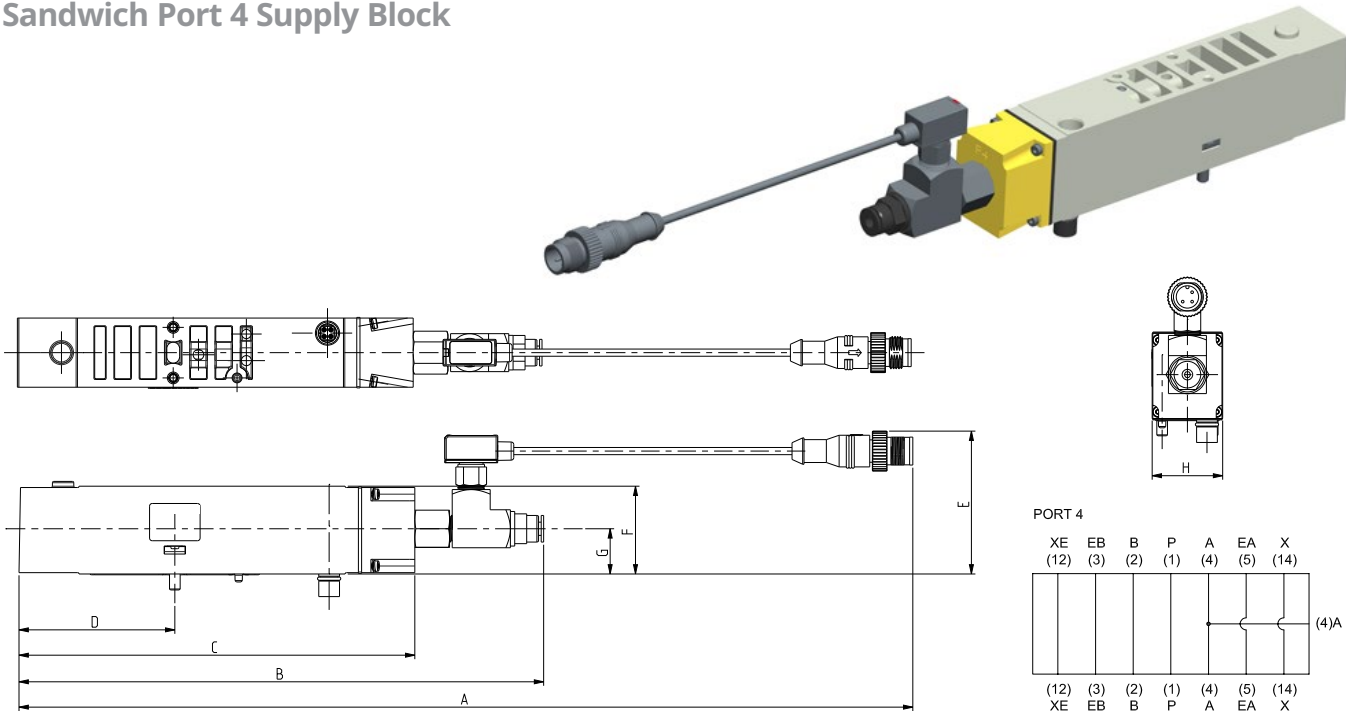
Weight	
lbs	kg
0.55	(0.25)

A	B	C	D
142 (5.591)	58 (2.283)	33 (1.3)	26 (1.02)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Sandwich Port 4 Supply Block



A	B	C	D	E	F	G	H
336.0 (13.23)	197.2 (7.76)	148.8 (5.86)	58.6 (2.31)	53.7 (2.11)	33.0 (1.30)	17.0 (0.67)	26.5 (1.04)

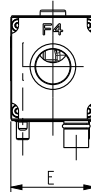
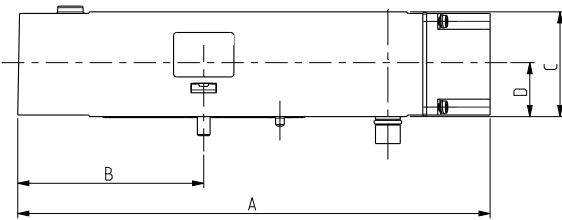
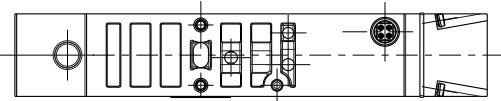
Part Number	Port for Pilot Supply	Description
K503AU516663014	5/32 (4mm) Push-in Fitting	Proprietary Port 4 supply block with AP10
8503AU516663013	Plugged	Proprietary Port 4 supply block with AP10
K503AU516663012	5/32 (4mm) Push-in Fitting	ISO15407-2 Port 4 supply block with AP10
8503AU516663011	Plugged	ISO15407-2 Port 4 supply block with AP10

- Monitors pressure to external devices by AP10 Pressure Switch
- Can be used to supply pressure from Port 4 of valve to pilot Safety zone of manifold via Pilot Separation Pilot block
- Allows for introduction of secondary pilot supply to either an individual valve or zone of valves on manifold. Supply to zone of manifold requires selection of Manifold Block and End Plates with Pilot Separation option
- Pilot Supply air can be from either an external valve or integrated into the manifold via the Port 4 Supply Block

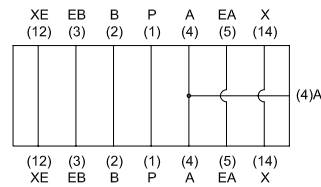
AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Sandwich Port 4 Supply Block



PORT 4



A	B	C	D	E
148.8 (5.86)	58.6 (2.31)	33.0 (1.30)	17.0 (0.67)	26.5 (1.04)

Part Number	Port for Pilot Supply	Description
8503AU516663002	1/4 NPT	Proprietary Port 4 supply block without pressure switch
G503AU516663016	G1/4 (BSPP)	Proprietary Port 4 supply block without pressure switch
8503AU516663001	1/4 NPT	ISO15407-2 Port 4 supply block without pressure switch
G503AU516663015	G1/4 (BSPP)	ISO15407-2 Port 4 supply block without pressure switch

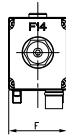
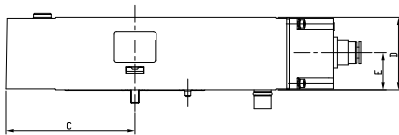
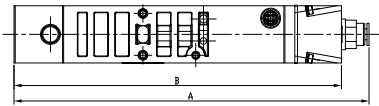
- Customer must integrate pressure feedback on this port in order to meet diagnostic coverage requirements for ISO 13849-1
- Can be used to supply pressure from Port 4 of valve to pilot Safety zone of manifold via Pilot Separation Pilot block
- Allows for introduction of secondary pilot supply to either an individual valve or zone of valves on manifold. Supply to zone of manifold requires selection of Manifold Block and End Plates with Pilot Separation option
- Pilot Supply air can be from either an external valve or integrated into the manifold via the Port 4 Supply Block

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

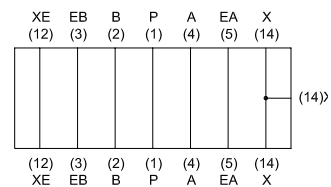
Dimensions: mm (inches)

Sandwich Pilot Supply Block

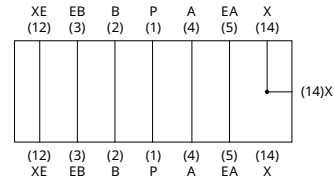
- Allows for introduction of secondary pilot supply to either an individual valve or zone of valves on manifold. Supply to zone of manifold requires selection of Manifold Block and End Plates with Pilot Separation option
- Pilot Supply air can be from either an external valve or integrated into the manifold via the Port 4 Supply Block



ZONED PILOT



INDEPENDENT PILOT



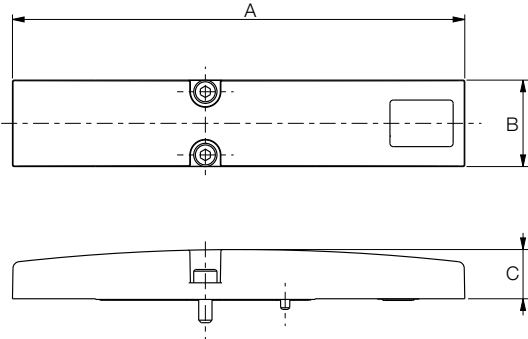
Part Number	Port for Pilot Supply	Description
8503AP428300008	1/4 NPTF	Proprietary Zoned Pilot Supply Block
G503AP428300008	G 1/4	Proprietary Zoned Pilot Supply Block
K503AP428300010	5/32 (4mm) Push-In Fitting	Proprietary Zoned Pilot Supply Block
8503AP428300007	1/4 NPTF	ISO15407-2 Zoned Pilot Supply Block
G503AP428300007	G 1/4	ISO15407-2 Zoned Pilot Supply Block
K503AP428300009	5/32 (4mm) Push-In Fitting	ISO15407-2 Zoned Pilot Supply Block
8503AP428300006	1/4 NPTF	Proprietary Independent Pilot Supply Block
G503AP428300006	G 1/4	Proprietary Independent Pilot Supply Block
8503AP428300005	1/4 NPTF	ISO15407-2 Independent Pilot Supply Block
G503AP428300005	G 1/4	ISO15407-2 Independent Pilot Supply Block

A	B	C	D	E	F
161 (6.350)	148.78 (5.857)	58.58 (2.306)	33 (1.299)	17 (0.669)	26.5 (1.043)

AVENTICS™ Series 503 Zoned Safety Pneumatic Valve System

Dimensions: mm (inches)

Blank Station Plate Kit



Weight	
lbs (kg)	
0.20 (0.09)	

A	B	C
136 (5.354)	26 (1.024)	14.8 (0.58)